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09/986,686	11/09/2001	Haruyasu Sakata	Q67160	5876

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EXAMINER

AGUSTIN, PETER VINCENT

ART UNIT	PAPER NUMBER
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2652

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DATE MAILED: 03/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/986,686

Applicant(s)

SAKATA ET AL.

Examiner

Peter Vincent M Agustin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-8 and 10 is/are rejected.
- 7) ☒ Claim(s) 4 and 9 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign mentioned in the description: reference character 10, cited on page 5, line 8.

4. The drawings are objected to because of the following minor informalities:

Figure 3, step S15: "MOITOR" should be --MONITOR--.

Figure 3, step S16: "SUSPENDETD" should be --SUSPENDED--.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

5. Claims 1, 5, 6 & 10 objected to because of the following informalities:

Claim 1, line 20; claim 5, line 19; claim 6, line 15; and claim 10, line 7: "an stored" should be --a stored--.

Appropriate correction is required.

6. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1, 5, 6 & 10 rejected under 35 U.S.C. 102(b) as being anticipated by Tani (US 5,233,596).

In regard to claim 1, Tani discloses an optical recording apparatus (figure 1) for performing recording by irradiating a light beam emitted from a light source (1) to a recording medium (4), comprising: a light source driving portion (5) for driving said light source; an emitted light power detecting portion (9) for detecting an emitted light power from said light source; a temperature detecting portion (6) for detecting a temperature of said light source; a light power control portion (5) for adjusting a driving current of said light source such that a change rate (column 3, lines 45-49) of an emitted light power detection value from said emitted light power detecting portion fall within a predetermined range; and a detection value storing portion (7b) for storing a driving

current adjustment value from said light power control portion and a temperature detection value from said temperature detecting portion in an associated manner, wherein said light power control portion adjusts the driving current value of said light source based on an stored detection value in said detection value storing portion when the temperature detection value is within a range of temperature detection values already stored in said detection value storing portion (column 3, lines 40-49).

In regard to claim 5, Tani discloses an optical recording apparatus (figure 1) for performing recording by irradiating a light beam emitted from a light source (1) to a recording medium (4), comprising: a light source driving portion (5) for driving said light source; an emitted light power detecting portion (9) for detecting an emitted light power from said light source; a temperature detecting portion (6) for detecting a temperature of said light source; a light power control portion (5) for adjusting a driving current of said light source driving portion to maintain the emitted light power from said light source substantially at a predetermined value (column 3, lines 11-21), and a detection value storing portion (7b) for storing a driving current adjustment value from said light power control portion and a temperature detection value from said temperature detecting portion in an associated manner, wherein said light power control portion adjusts the driving current value of said light source based on an stored detection value in said detection value storing portion when the temperature detection value is within a range of temperature detection values already stored in said detection value storing portion (column 3, lines 40-49).

In regard to claim 6, Tani discloses a recording method of an optical recording apparatus (figure 1) for performing recording by irradiating a light beam emitted from a light source (1) to a recording medium (4), comprising: light source driving step of driving said light source (5); emitted light power detecting step of detecting an emitted light power from said light source (9); temperature detecting step of detecting a temperature of said light source (6); light power control step of adjusting a driving current of said light source (5) such that a change rate (column 3, lines 45-49) of an emitted light power detection value in said emitted light power detecting step fall within a predetermined range; and detection value storing step of storing a driving current adjustment value in said light power control step in association with a temperature detection value obtained in said temperature detecting step (7b), wherein said light power control step adjusts the driving current of said light source based on an stored detection value in said detection value storing step when the temperature detection value is within a range of temperature detection values already stored in said detection value storing step (column 3, lines 40-49).

In regard to claim 10, Tani discloses a recording method of an optical recording apparatus (figure 1) for performing recording by irradiating a light beam emitted from a light source (1) to a recording medium (4), comprising: light source driving step of driving said light source (5); emitted light power detecting step of detecting an emitted light power from said light source (9); temperature detecting step of detecting a temperature of said light source (6); light power control step of adjusting a driving current of said light source (5) to maintain the emitted light power from said light source

substantially at a predetermined value (column 3, lines 11-21), and detection value storing step of storing a driving current adjustment value in said light power control step in association with a temperature detection value obtained in said temperature detecting step (7b), wherein said light power control step adjusts the driving current of said light source based on an stored detection value when the temperature detection value is within a range of temperature detection values already stored in said detection value storing step (column 3, lines 40-49).

9. Claims 1, 5, 6 & 10 rejected under 35 U.S.C. 102(e) as being anticipated by Miyabata et al. (hereafter Miyabata) (US 6,671,248).

In regard to claim 1, Miyabata discloses an optical recording apparatus (figure 1) for performing recording by irradiating a light beam emitted from a light source (1) to a recording medium, comprising: a light source driving portion (2) for driving said light source; an emitted light power detecting portion (4) for detecting an emitted light power from said light source; a temperature detecting portion (7 & 8) for detecting a temperature of said light source; a light power control portion (11) for adjusting a driving current of said light source such that a change rate of an emitted light power detection value from said emitted light power detecting portion fall within a predetermined range (see column 6, lines 4-8); and a detection value storing portion (12) for storing a driving current adjustment value from said light power control portion and a temperature detection value from said temperature detecting portion in an associated manner, wherein said light power control portion adjusts the driving current value of said light source based on an stored detection value in said detection value storing portion when

the temperature detection value is within a range of temperature detection values already stored in said detection value storing portion (see column 5, line 62 thru column 6, line 4).

In regard to claim 5, Miyabata discloses an optical recording apparatus (figure 1) for performing recording by irradiating a light beam emitted from a light source (1) to a recording medium, comprising: a light source driving portion (2) for driving said light source; an emitted light power detecting portion (4) for detecting an emitted light power from said light source; a temperature detecting portion (7 & 8) for detecting a temperature of said light source; a light power control portion (11) for adjusting a driving current of said light source driving portion to maintain the emitted light power from said light source substantially at a predetermined value (see column 5, lines 44-52), and a detection value storing portion (12) for storing a driving current adjustment value from said light power control portion and a temperature detection value from said temperature detecting portion in an associated manner, wherein said light power control portion adjusts the driving current value of said light source based on an stored detection value in said detection value storing portion when the temperature detection value is within a range of temperature detection values already stored in said detection value storing portion (see column 5, line 62 thru column 6, line 4).

In regard to claim 6, Miyabata discloses a recording method of an optical recording apparatus (figure 1) for performing recording by irradiating a light beam emitted from a light source (1) to a recording medium, comprising: light source driving step of driving said light source (2); emitted light power detecting step of detecting an

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emitted light power from said light source (4); temperature detecting step of detecting a temperature of said light source (7 & 8); light power control step of adjusting a driving current of said light source (11) such that a change rate of an emitted light power detection value in said emitted light power detecting step fall within a predetermined range (see column 6, lines 4-8); and detection value storing step of storing a driving current adjustment value in said light power control step in association with a temperature detection value obtained in said temperature detecting step (12), wherein said light power control step adjusts the driving current of said light source based on an stored detection value in said detection value storing step when the temperature detection value is within a range of temperature detection values already stored in said detection value storing step (see column 5, line 62 thru column 6, line 4).

In regard to claim 10, Miyabata discloses a recording method of an optical recording apparatus (figure 1) for performing recording by irradiating a light beam emitted from a light source (1) to a recording medium, comprising: light source driving step of driving said light source (2); emitted light power detecting step of detecting an emitted light power from said light source (4); temperature detecting step of detecting a temperature of said light source (7 & 8); light power control step of adjusting a driving current of said light source (11) to maintain the emitted light power from said light source substantially at a predetermined value (see column 5, lines 44-52), and detection value storing step of storing a driving current adjustment value in said light power control step in association with a temperature detection value obtained in said temperature detecting step (12), wherein said light power control step adjusts the

driving current of said light source based on an stored detection value when the temperature detection value is within a range of temperature detection values already stored in said detection value storing step (see column 5, line 62 thru column 6, line 4).

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 2 & 7 rejected under 35 U.S.C. 103(a) as being unpatentable over Tani or Miyabata as applied to claims 1 & 6 above, and further in view of Imai (US 5,742,566).

For a description of Tani or Miyabata, see the rejection above. However, neither Tani nor Miyabata disclose a correction coefficient storing portion (or step) for storing a correction coefficient for the driving current value corresponding to the temperature of said light source in advance, wherein said light power control portion (or step) adjusts the driving current value of said light source by using the correction coefficient already stored in said correction coefficient storing portion (or step) when the driving current adjustment value corresponding to a current temperature detection value is not stored in said detection value storing portion (or step).

Imai discloses a correction coefficient storing portion (or step) (figure 3, element 14B) for storing a correction coefficient for the driving current value corresponding to the temperature of said light source in advance (see also column 4, line 66 thru column 5, line 20; and column 6, lines 59-62), and using this correction coefficient, the driving current is adjusted when the driving current adjustment value is not stored, i.e., when it is detected that temperature correction is necessary (see figure 5, steps SP3 & SP4). It would have been obvious to one of ordinary skill in the art at the time of invention by the applicant to have added the correction coefficient storing portion (or step) of Imai to the apparatus (or method) of Tani or Miyabata. The motivation for doing so would have been to provide a means for correcting laser power despite temperature changes, thereby increasing recording accuracy.

12. Claims 3 & 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Tani or Miyabata as applied to claims 1 & 6 above, and further in view of Tanahashi (JP 4320384).

For a description of Tani or Miyabata, see the rejection above. However, neither Tani nor Miyabata disclose that the light power control portion (or step) computes an interpolation value of the stored detection value to adjust the driving current of said light source based on the interpolation value.

Tanahashi (see abstract) discloses an interpolation controller (8) that provides a driving current corresponding to optical intensity data (stored detection value), the interpolation controller being provided in order to decide an arbitrary optical output intensity. It would have been obvious to one of ordinary skill in the art at the time of

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invention by the applicant to have configured the light power control portion (or step) of Tani or Miyabata to compute an interpolation value of the stored detection value to adjust the driving current of said light source based on the interpolation value, as suggested by Tanahashi. The motivation for doing so would have been to provide an arbitrary optical output intensity for any stored detection value, thereby simplifying the design.

Allowable Subject Matter

13. Claims 4 & 9 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter:

In regard to claims 4 & 9, no prior art of record alone or in combination discloses or suggests an apparatus or method according to claims 1 & 6, further comprising a medium determining portion/step for determining whether the recording medium is newly loaded or not, wherein the detection value storing portion/step updates the stored detection value with a new detection value when the medium determining portion determines that the recording medium is newly loaded.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Koike et al. (US 5,625,616) discloses a method for estimating the deterioration of a light emitting device. Figure 1 shows a temperature detecting portion (26), a light source (LD), emitted light detector (PD), a light source driving portion (16), a light power control portion (22, 15, 12 & 14), a portion that calculates temperature correction coefficient (22), and a detection value storing portion (28).

Kono (US 5,274,622) discloses an apparatus for controlling the emission power of a laser diode.


Van Doorn et al. (US 5,455,717) discloses a recording device with temperature-dependent write-current control.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Vincent M Agustin whose telephone number is (703) 305-8980. The examiner can normally be reached on Monday thru Friday 9:00AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PVA
03/16/2004



W. R. YOUNG
PRIMARY EXAMINER